263. VEHICLE FENDERS.
8
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ENGLISH 8174/1883

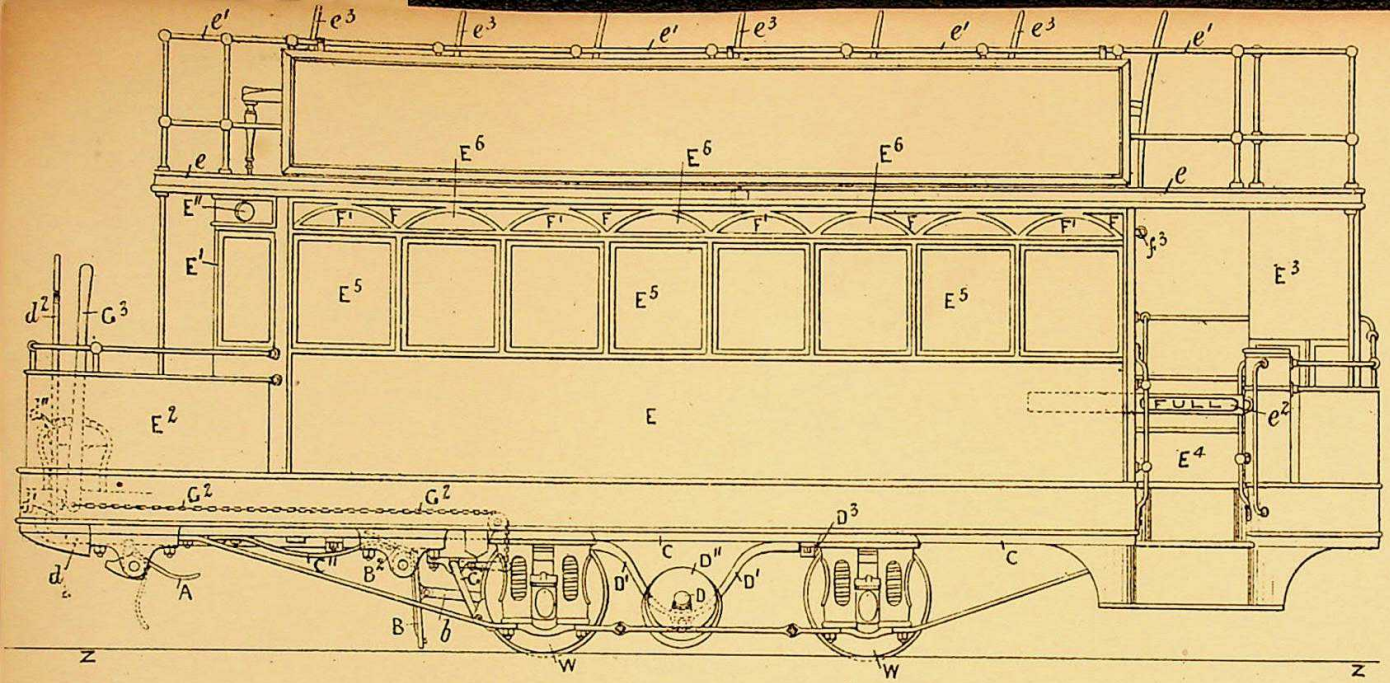


FIG. 2.

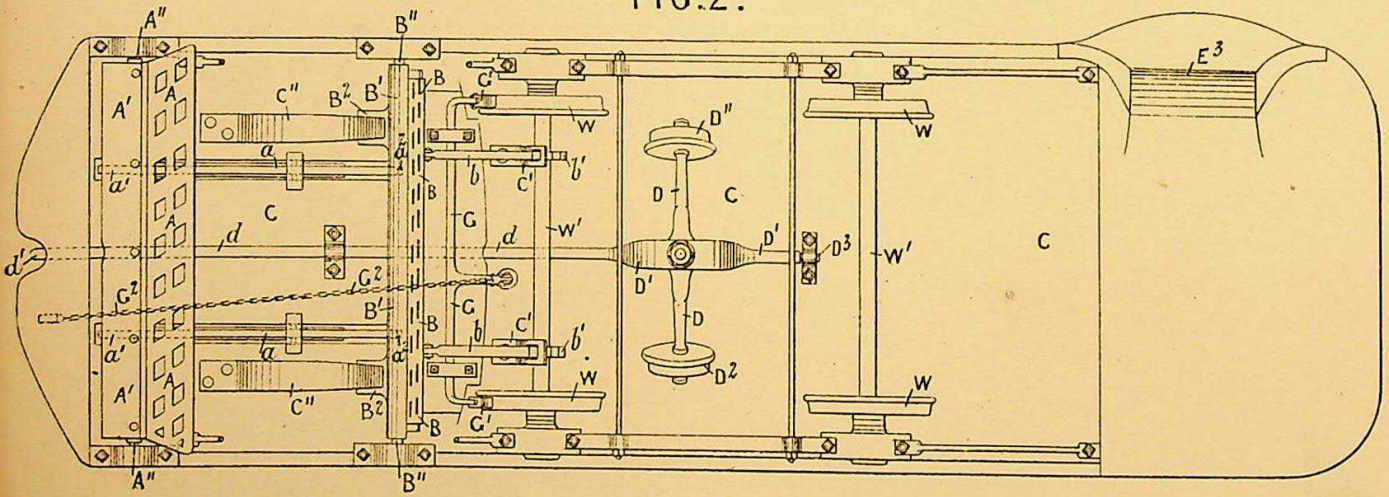


FIG. 3.

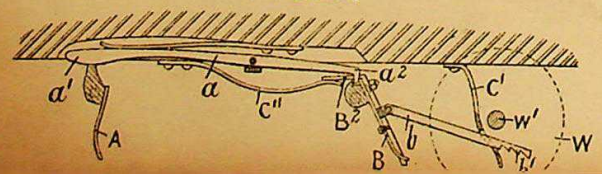


FIG. 4.

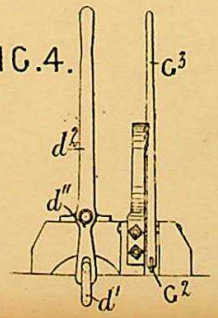


FIG. 8.

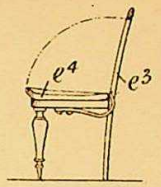


FIG. 5.

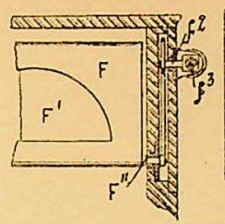


FIG. 6.

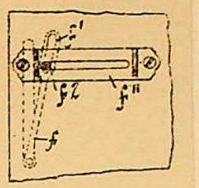


FIG. 7.

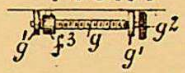
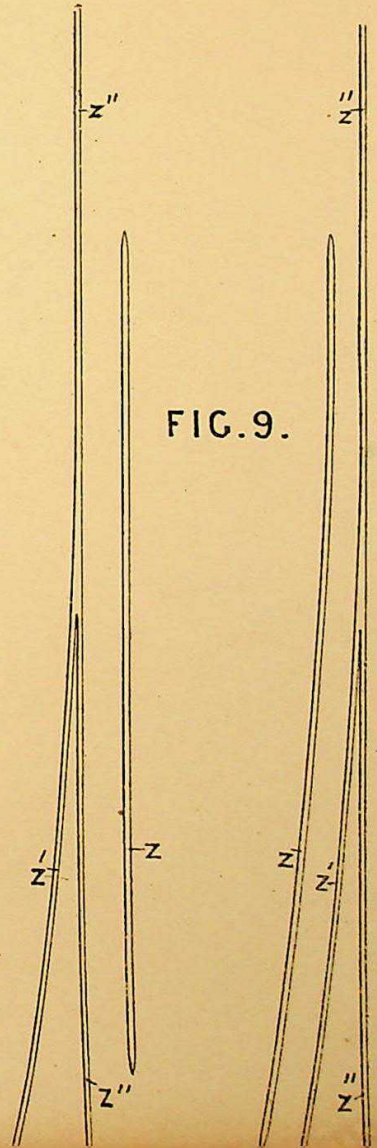


FIG. 9.



105. Railway Rolling Stock,
Wheel Fenders.

N° 8174 A.D. 1893

Date of Application, 22nd Apr., 1893
Complete Specification Left, 22nd Jan., 1894—Accepted, 24th Feb., 1894

PROVISIONAL SPECIFICATION.

Improvements in and relating to Tramway Cars.

I, ALLAN CURRIE of 9 Newhall Terrace, Bridgeton, Glasgow, Lanarkshire, Power Loom Tenter, do hereby declare the nature of my invention to be as follows :—

This invention has reference to and comprises improvements in the construction of tramway cars, and especially in arrangements for preventing children or objects falling in front of the vehicle getting injured, and for shifting the vehicle from one line of rails to another without the use of movable points.

The improvements consist first in fitting two swivelling guard frames below the supporting platform of the tramway car, one at the front end, and the other some distance behind it in front of the forward wheels of the vehicle. These guard frames would preferably each be formed of open laced metal work secured to transverse spindles, carried by journal ends in bearings at each side of the car. The back transverse guard frame would be fitted with two projecting catches in front on which would press the free ends of blade springs or spring levers. The back guard frame would also be fitted with two projecting arms with notched ends which would pass through and engage with eyes on the ends of two spring plates or levers that would bear close to or over the axle of the front wheels. In putting these guard frames into operation the back guard frame would be pressed slightly back and the front frame would be oscillated to a perpendicular position and in moving into this position would depress the front ends of two parallel spring levers so as to move the back catch ends of said levers and lock or retain the back frame in its reclined or angled position.

When an object on the tramway line strikes the front guard plate it will oscillate and press it up to a horizontal position, and the turning motion of this frame will again act on the parallel spring levers to free their catch ends and then the other set of blade springs or spring levers will act on the projections on the back guard frame and bring it to a perpendicular position to keep the object in front and prevent it getting near the wheels of the vehicle; while the greater the pressure on this frame will make its back projecting arms act on the back spring levers or blocks to press and act as a brake on the axle of the front wheels. These guard frames would or may be actuated by hand as well as automatically by rod connections from hand levers on the platform of the car.

To shift the car at crossings or from one tramway line of rails to another an oscillating or swivelling loose frame would be fitted under the vehicle preferably at or near the centre of its length between the front and back wheels, and flanged wheels would be fitted on each end of this transverse frame. Rod connections would be taken from this frame to a hand lever on the guards platform of the vehicle, so that when the car is desired to be shifted at any crossing the turning of this hand lever to the right or left will correspondingly act on the swivelling frame and oscillate it to the one side to bring either the right or left hand roller wheel into action on a central line of rails and turn the car on to the section or line of rails in which it is desired that it should proceed.

The car would be formed with a flooring frame which would be placed over the lower wheeled frame, and have recesses on its under surface to fit over a series of blade or other springs or spring levers in the lower frame. The upper vertical carriage frame of the car would be formed much as usual, but slightly rounded at the front part with central and side windows, and with port holes for the lamps at the rounded parts, and have a framed in part in front for the driver. A staircase

would be fitted at the back end of the car, on the opposite side to the car entrance gate for the passengers ascending to, and descending from the upper platform on top of car which would be fitted with a surrounding protecting rail. While a sliding or movable shutter or semaphore would be fitted at the front part of the entrance gate to car to indicate when the car was full and prevent the entrance of further passengers. Longitudinal side seats would be fitted within the car, and also a transverse seat at the front end for the passengers. While the seats used for the platform on top of car would preferably be chairs with spring hinged or actuated covers which will automatically fall down after each passenger has risen and protect the seat from getting wet in damp weather. The car would be fitted with the usual longitudinal side windows, and also with a series of small segmental windows over these mounted on a swivelling frame. This frame would be hinged to swivel from below and come up, and by its glass windows close segmental apertures formed in the sides of car, or open these up to any desired extent to ventilate the interior of the car, and these swivelling window frames would be actuated from the one end by the guard by lever, screw or other equivalent adjusting mechanism.

Dated 21st April 1893.

W. R. M. THOMSON & Co.,
96, Buchanan Street, Glasgow, Agents.

COMPLETE SPECIFICATION.

Improvements in and relating to Tramway Cars.

I, ALLAN CURRIE, of 9 Newhall Terrace, Bridgeton, Glasgow, Lanarkshire, Power Loom Tenter, do hereby declare the nature of my invention, and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement in writing, that is to say :—

This invention has reference to and comprises improvements in the construction of tramway cars and like vehicles and especially in arrangements for preventing children or objects falling in front of the vehicle from getting injured and for shifting the vehicle from one line of rails to another without the use of movable points.

And in order that my said invention and the manner of performing or carrying the same into effect or practice may be properly understood, I have hereunto appended an explanatory sheet of drawings in which the same reference letters are used to indicate corresponding parts in all the figures where shown.

Figure 1 is a side elevation of a tramway car as constructed and fitted in accordance with one arrangement of my improvements.

Figure 2 is an inverted plan view corresponding to Figure 1, and looking on the under surface of the car bottom frame.

Figure 3 is a vertical section showing my improved mechanism fitted at the front part of the under frame of car; and

Figure 4, is a detached elevation showing the hand actuating levers of the point shifting and brake mechanism.

Figures 5, 6, and 7 show detached views of the mechanism for actuating the ventilators of car.

Figure 8 is an elevation showing the hinged cover weatherproof seats for top of car. And

Figure 9 is a diagram plan view of the switch point connections of line of tramway rails.

Referring to these drawings :—The improvements consist, first, in fitting two swivelling guard frames A, B below the supporting platform C, of the tramway car, one A at the front end, and the other B some distance behind it in front of the forward wheels W of the vehicle. These guard frames A, B, would

preferably each be formed of open laced metal work, as shown in Figure 2, secured to transverse spindles, A^1, B^1, carried by journal ends A^{11}, B^{11} in bearings at each side of the car. The back transverse guard frame B would be fitted with two projecting catches B^2 in front on which would press the free ends of blade springs or spring levers C^{11}. The back guard frame would also be fitted with two projecting arms *b* with serrated or notched ends b^1 which would pass through and engage with eyes on the ends of two spring plates, blocks, or levers C^1 that would bear close to or under the axle W^1 of the front wheel W. In putting these guard frames into operation the back guard frame B would be pressed slightly back and the levers *b* raised to remove their serrated teeth b^1 from contact with the lower end of the slots in the spring levers or blocks C^1, and the front frame A would be oscillated to a perpendicular position, and in moving into this position would raise the front ends a^1 of two parallel spring levers *a* so as to depress the back catch ends a^2 of said levers *a* and lock or retain the back frame B in its reclined or angled position, as shown in Figure 3.

When an object on the tramway line strikes the front guard plate A it will oscillate and press it up to a nearly horizontal position, as shown in Figure 1, and the turning motion of this frame A will again act on the parallel spring levers *a* to free their catch ends a^2, and then the other set of spring blades or spring levers C^{11}, will act on the projections B^2 on the back guard frame B, and bring it to a perpendicular position, as shown in Figure 1, to keep the object in front and prevent it getting near the wheels W of the vehicle ; while the greater the pressure on this frame B, its back projecting arms *b* will correspondingly act on the back spring levers or blocks C^1 to press and act as a brake on the axle W^1 of the front wheels W. These guard frames A, B, may be actuated by hand as well as automatically by ordinary rod connections from hand levers on the platform of the car.

To shift the car at point crossings or from one tramway line of rails to another an oscillating or swivelling loose frame D D^1 would be fitted under the platform C of the vehicle, preferably at or near the centre of its length between the front and back wheels, and flanged wheels D^{11} D^2 would be fitted on each transverse end D of this frame D, D^1. The part D^1 of frame would oscillate in a bearing at D^3, and a rod connection *d* would be taken from this frame D, D^1, to a swivelling hand lever d^2 fulcrumed at d^{11} on the drivers platform of the vehicle the end of rod *d* being preferably curved up at d^1 for the slotted end of lever d^2 to engage same, so that when the car is desired to be shifted at any point crossing the swivelling or turning of this hand lever d^2 to the right or left will correspondingly act on the swivelling frame D, D^1, and oscillate it to one side to bring either the right or left hand roller wheel D^{11} or D^2 into action on a central line of rails Z, Figure 9, and turn the car on to the section or line of rails Z^1, Z^1, or keep it on the line Z^{11}, according as it is desired that it should proceed. An ordinary brake lever G, would be fitted on the car with blocks G^1 at its ends over the wheels W, and have a chain connection G^2 to a hand operated lever G^3, much in a usual manner.

The car would be formed with a flooring frame which would be placed over the lower wheeled frame C, and may have recesses on its under surface to fit over a series of blade or other springs or spring levers in the lower frame C. The upper vertical carriage frame E of the car would be formed much as usual, but slightly rounded at the front part E^1 with central and side windows, and with port holes E^{11} for the lamps at the rounded parts, and have a framed in part E^2, in front of the driver. A staircase would be fitted at E^3, at the back end of the car, on the opposite side to the car entrance E^4 for the passengers ascending to, and descending from the elevated platform *e* on top of car, which would be fitted with a surrounding protecting rail e^1 ; while a sliding or movable bar or semaphore e^2, Figure 1 would be fitted at the front part of the entrance E^4 to car to indicate when the car was full, and prevent the entrance of further passengers. Longitudinal side seats would be fitted within the car, and also a transverse seat at front end E^1 for the

passengers; while the seats used for the platform e on top of car would preferably be chairs e^3, as shown in Figure 8, with spring hinged or actuated covers e^4 which will automatically fall down, after each passenger has risen, and protect the seat from getting damp in wet weather. The car would be fitted with the usual longitudinal side windows E^5, and also with a series of small segmental windows F^1 over these mounted on a swivelling frame F. This frame F would be hinged to swivel from below at F^{11} and come up, and by its glass windows F^1 close segmental apertures formed at E^6 in the sides of car, or open these up to any desired extent to ventilate the interior of the car, and these swivelling window frames F, would be actuated from the one end by the guard by lever, screw, or other equivalent adjusting mechanism. This would be effected under one arrangement, as shown in Figures 5 to 7, by having a link f jointed at its lower end to the axis F^{11} of hinged frame F, and having its upper slotted end f^1 engaging with a pin or rod f^2 passing through a slotted guide plate f^{11} and connected to an internal screwed nut f^3 which would be mounted on a screw threaded rod g carried in bearings g^1, and as this screwed rod g was turned by the milled head g^2 in the one direction or the other it would correspondingly travel the nut f^3 to swivel the frame F and open or close it against the apertures E^6 of car E.

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is:—

First. The construction, or general arrangement and combination of the parts of tramway cars and like vehicles, substantially as herein described in reference to and shown in the accompanying drawings.

Second. In tramway cars and like vehicles, the fitting and use of a swivelling guard frame in front of the forward wheels of the vehicles, to act in combination with and be brought into action through spring or equivalent connections by another frame or organ which comes first in contact with the object, substantially as herein described, in reference to and by way of application shown in the accompanying drawings.

Third. In tramway cars and like vehicles, the fitting and use of a swivelling guard frame in front of the forward wheels of the vehicle, and having projecting arms with serrated ends to engage with and press spring levers or blocks against the wheel axle, substantially as and in the manner herein described in reference to and shown in the accompanying drawings.

Fourth. In tramway cars and like vehicles, the fitting and use of an oscillating or swivelling wheeled frame operated by rod connections from a hand lever, to shift the wheeled vehicle at point crossings from one line of rails to another substantially as herein described in reference to and shown in the accompanying drawings.

Fifth. In tramway cars and like vehicles, the fitting and use of a hinged or swivelling window frame at the sides of vehicle operated by screw, lever, or equivalent adjusting mechanism to ventilate the interior of vehicle, substantially as herein described in reference to and by way of application shown in the accompanying drawings.

Dated the 20th January 1894.

W. R. M. THOMSON & Co.,
96, Buchanan Street, Glasgow, Agents.

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